

APPENDIX K

REPORT BY MONSANTO'S DEPARTMENT OF
MEDICINE AND ENVIRONMENTAL HEALTH

CER 108616

CONFIDENTIAL 92-CV-204-WDS

EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

Consento

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FROM (NAME & LOCATION) Dept. of Medicine & Environmental Health - B.W. Elcy, A2SC
M.A. Pierle, E1SA

DATE: June 6, 1977

cc: J.T. Garrett, A2SG

SUBJECT: Pressure filter sludge removal

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REFERENCE: W.G.K. PNA Process

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On Friday, May 27, the undersigned toured the W.G.K. plant's PNA process unit (Department 222) to observe the removal and drumming of PNA contaminated sludge from the pressure filter in order to assess the environmental acceptability/unacceptability of that task.

Specific attention was given to the lime handling and slurry make-up system, sludge box containing PNCB, and the manual clean-out and drumming of PNA contaminated filter cake sludge.

A. Description of Operations

Lime Handling and Slurry System:

Fifty-pound bags of hydrated lime are stored on pallets in a semi-open shed adjacent the lime slurry tank. Approximately once every five hours a total of fifty-two bags of lime are individually lifted to a bag breaker, opened, and discharged to a hopper. After lime from several bags has been conveyed to the slurry tank, water is added and the tank agitated for slurry make-up.

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PNCB Sludge Box:

Residual PNCB from the ammonia still is discharged to an open-top sludge box filled with water. Periodically the water is decanted and the wet PNCB is shoveled into 55-gallon drums for disposal.

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Filter Clean-Out and Sludge Drumming:

A horizontal pressure leaf filter removes calcium carbonate, silicates, and unreacted lime from the molten PNA after lime treatment and steam distillation. The pressure filter is opened and manually cleaned on an average of three to five times per day ($\approx 3\frac{1}{2}$ times/shift). Each clean-out requires the removal of approximately 3000 pounds of sludge containing 300 pounds of PNA (10% by weight). Although the filter cake is reasonably dry (probably 30-50% solids), water is needed to effectively wash down the filter leaves and surrounding area.

Prior to opening, the filter is steamed to remove residual organics present in the sludge. The amount of organics (PNA and PNCB) released during filter opening will depend on the degree of steaming and hold (cooling) time before opening. The sludge removed from the filter drops one level through an open-bottom chute into 55 gallon drums for subsequent land-filling.

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After all solids had been dislodged from the filter leaves, the top operator unfastened the leaves from the support bar and using high pressure water, hosed down the inside of the filter casing and leaves.

The majority of the wash water flows down the chute into a drum used as a solids separator (probably inefficient). The overflow from the drum is sewered.

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B. Compliance Status:
Industrial Hygiene

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Environmental Control

The Federal EPA is developing standards for the discharge of materials from PNA production. The losses from the filter system are additive to normal process losses and will require extensive treatment. Timing is predicted as 1983. Therefore, the elimination of the filtration step would positively impact water pollution control efforts at the plant and result in a reduction of future treatment costs.

C. Alternatives

As discussed at the pre-project board meeting on May 23, there appear to be two alternatives for addressing the problems associated with the sludge filter.

1. Eliminate the system via process modification - the "no-line" process.
2. Install additional mechanical equipment and personnel protection systems to reduce exposure.

The following analysis is used to compare the alternatives.

Environmental
Media

Mechanical
Additions

Process
Modifications

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Water

No change

Reduction

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In summary, the "no-lime" process is preferred since it

and reduces water pollution, although this reduction may only be small.

D. Recommendations

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Reviewed By: J. T. Garrett

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